Short-term and long-term clinical outcomes of unprotected left main stenting in STEMI

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Purpose

Patients with ST-elevation myocardial infarction (STEMI) due to the left main coronary artery disease represent one of the most challenging subsets in clinical practice. Current data on the short-term and long-term outcomes of percutaneous coronary interventions on left main stem lesions in the setting of STEMI is very limited and mainly come from small registry studies, consisting of a small number of patients. We analyzed short- and long-term clinical outcomes of unprotected left main stenting in patients presenting with STEMI.

Methods

Of the 728 PCIs performed in STEMI patients at our hospital between January 2009 and December 2010, the left main stem was the culprit lesion in 23 (3.2%) cases. A retrospective analysis of treatment of 23 patients (mean age was 63.4±5.5 years, 73.9% were males) presenting with STEMI due to the left main disease that underwent emergency PCI at a single high-volume center was performed. In-hospital mortality and major cardiac and cerebrovascular events (MACCE), defined as death, myocardial infarction (MI), stroke and repeat revascularization, in a 12-month follow-up were evaluated.

Results

The median time from symptoms onset to balloon was 85 minutes with an iqr of (60 to 125 min). Seventeen (73.9%) patients were directly transferred to our hospital. Six (26.1%) patients got thrombolytic therapy at other hospitals and then were immediately transferred for urgent PCI as a pharmacoinvasive strategy.

Nine (39.1%) patients presented in cardiogenic shock, 12 (52.2%) patients had an acute pulmonary edema. Angiographically, 4 (17.4%) patients had an acute occlusion of left main stem, 14 (60.9%) – distal left main disease, 2 (8.7%) – isolated left main disease, 6 (26.0%) – chronic total occlusion of RCA, 2 (8.7%) - left dominant anatomy. Intra-aortic balloon pump and Ilb/IIa agents were used in 91.3% and 100% patients respectively. Drug-eluting stents were used in 20 (87.0%) patients. Multi-vessel PCI in acute phase was performed in 6 (26.0%) patients. TIMI III flow was achieved in all cases.

In-hospital mortality was 13.0% (3 patients with cardiogenic shock). At 12 months of follow up, 8/20 (40.0%) patients were performed CABG, 3/20 (15%) patients had staged PCI of non-culprit lesions, there was 1/20 (5.0%) death from non-vascular cause. There was no stroke or new MI. At 12 months of follow up the overall MACCE rate was 65.2%.

Conclusions

Unprotected left main coronary artery PCI in ST segment elevation MI is technically feasible in most patients and provides rapid reperfusion to critically ill patients with acceptable short-term and long-term outcomes. PCI of the noninfarct-related arteries in acute setting in patients with multivessel coronary disease should be considered in patients that remain hemodynamically unstable after left main stenting.

The high MACCE rate at 12 months of follow up is due to the high incidence of repeat revascularization and can be explained by the intention to provide complete revascularization after stabilization of left main STEMI patients with concomitant multi-vessel coronary disease.

Disclosure of Interest

The authors have no financial relationships to disclose.